



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,215	06/26/2003	Albert F. Winkeler III	66638/40337	6484

21888 7590 07/25/2006

THOMPSON COBURN, LLP
ONE US BANK PLAZA
SUITE 3500
ST LOUIS, MO 63101

EXAMINER

CLEARY, THOMAS J

ART UNIT PAPER NUMBER

2111

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/609,215	WINKELER ET AL.	
	Examiner	Art Unit	
	Thomas J. Cleary	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 25-66 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. The requirement for restriction is hereby vacated in view of Applicant's traversal and the status of the instant claims and their current scope. The Examiner reserves the right to impose restriction at a further time should Applicant amend the claims to diverge significantly in their scope.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. For the purposes of evaluating prior art, the following terms used by Applicant have been interpreted in accordance with their description and definition provided in the specification and drawings: a copy on send configuration type (Page 15 Line 36 – Page 18 Line 9 and Figures 5, 6a, 6b, 7a, and 7b); a copy to pool on receive configuration type (Page 18 Line 10 – Page 20 Line 11 and Figures 5, 8a, 8b, 9a, and 9b); a copy to buffer on receive configuration type (Page 21 Line 36 – Page 22 Line 4, Page 18 Line

Art Unit: 2111

10 – Page 20 Line 11, and Figures 5, 8a, 8b, 9a, and 9b); a push to pool on receive configuration type (Page 20 Line 12 – Page 21 Line 35 and Figures 5, 10, 11a, and 11b); a push to buffer on receive configuration type (Page 22 Line 4 – Page 22 Line 9, Page 20 Line 12 – Page 21 Line 35, and Figures 5, 10, 11a, and 11b); a queue on send configuration type (Page 22 Lines 10-33 and Figures 5, 12, and 13); a copy to self configuration type (Page 22 Line 34 – Page 23 Line 10 and Figures 5, 14, and 15); a queue to self configuration type (Page 41 Line 28 – Page 42 Line 2, Page 22 Line 34 – Page 23 Line 10 and Figures 5, 14, and 15); and an overwrite on send configuration type (Page 23 Line 11 – Page 24 Line 10 and Figures 5, 16, and 17).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 7-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 7 recites the limitation “a bus utilization percentage in a range from approximately 13% to approximately 25% is achieved for 8 Kbyte data transfers across the bus.” The only mention of the bus utilization in the specification appears in the

paragraph spanning Pages 3 and 4 in the Summary of the Invention. This paragraph indicates that the bus utilization percentages are expected values, and does not disclose how one of ordinary skill in the art would achieve these values.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6, 7-19, 30-32, and 34-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 6 recites the limitation "the communication utility is user-redefinable". It is unclear how a communication utility can be redefined.

9. The term "approximately" in Claims 7 and 30 is a relative term which renders the claim indefinite. The term "approximately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

10. In reference to Claim 34, it is unclear if the communication utility of Line 4 is the same as the communication utility of Line 1; if the first processor of Line 4 is the same

Art Unit: 2111

as the first processor of Line 2; and if the second processor of Line 4 is the same as the second processor of Line 2.

11. Claim 49 recites the limitation "the allocating step" in Line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1, 2, 3, 4, 5, 6, 20, 21, 22, 23, 26, 27, 28, 29, 33, 34, 35, 36, 37, 47, 50, 51, 52, and 65 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication Number 2004/0093438 to Odom ("Odom").

14. In reference to Claim 1, Odom discloses a data processing apparatus comprising: a plurality of data processing boards (See Figure 4 Numbers 334, 336, and 338); a bus connecting the boards with each other (See Figure 4 Number 332); and

wherein each board comprises a communication utility for communicating data over the bus to another board through a plurality of channels, and wherein at least one of the channels has a user-redefinable configuration (See Paragraphs 6 and 44).

15. In reference to Claim 2, Odom discloses the limitations as applied to Claim 1 above. Odom further discloses that each channel is separately user-redefinable (See Paragraph 6).

16. In reference to Claim 3, Odom discloses the limitations as applied to Claim 1 above. Odom further discloses that the at least one channel configuration is user-redefinable with one of a plurality of available configuration types (See Paragraph 44).

17. In reference to Claim 4, Odom discloses the limitations as applied to Claim 1 above. Odom further discloses that the boards and bus are VXI, which is an extension of VME (See Paragraphs 21 and 42).

18. In reference to Claim 5, Odom discloses the limitations as applied to Claim 1 above. Odom further discloses that the at least one channel configuration is user-redefinable with respect to the conditions under which DMA is used by the at least one channel for data transfers across the bus (See Paragraph 44).

19. In reference to Claim 6, Odom discloses the limitations as applied to Claim 4 above. Odom further discloses that the communication utility is user-redefinable with respect to the number of channels through which data is communicated (See Paragraph 44).

20. In reference to Claim 20, Odom discloses a method of communicating data comprising: defining, according to user input, a redefinable communication channel configuration for communicating data over a bus (See Paragraphs 6 and 44) between a first data processing board and a second data processing board (See Figure 4 Numbers 334, 336, and 338); communicating data according to the defined communication channel configuration from one board to the other over the bus (See Paragraphs 6 and 44).

21. In reference to Claim 21, Odom discloses the limitations as applied to Claim 20 above. Odom further discloses that the defining step comprises defining, according to user input, a plurality of redefinable communication channel configurations for a plurality of communication channels, and wherein the communicating step comprises communicating data from one board to the other over the bus according to the defined communication channel configurations (See Paragraph 6).

22. In reference to Claim 22, Odom discloses the limitations as applied to Claim 21 above. Odom further discloses that the defining step comprises defining each communication channel's configuration separately (See Paragraph 6).

23. In reference to Claim 23, Odom discloses the limitations as applied to Claim 21 above. Odom further discloses that the defining step comprises selecting, for at least one channel, one of a plurality of available configuration types (See Paragraph 44).

24. In reference to Claim 26, Odom discloses the limitations as applied to Claim 22 above. Odom further discloses that the defining step further comprises defining a maximum data transfer size for at least one communication channel (See Paragraph 55).

25. In reference to Claim 27, Odom discloses the limitations as applied to Claim 22 above. Odom further discloses that the defining step further comprises, for at least one communication channel, defining the conditions under which it uses DMA to transfer data over the bus (See Paragraph 47).

26. In reference to Claim 28, Odom discloses the limitations as applied to Claim 22 above. Odom further discloses that the defining step comprises defining the number of communication channels (See Paragraph 49).

27. In reference to Claim 29, Odom discloses the limitations as applied to Claim 22 above. Odom further discloses that any number of boards can be used by the system (See Figure 4 and Paragraph 42), and thus the data board capacity for the bus can be defined.

28. In reference to Claim 33, Odom discloses the limitations as applied to Claim 20 above. Odom further discloses that the boards and bus are VXI, which is an extension of VME (See Paragraphs 21 and 42).

29. In reference to Claim 34, Odom discloses a method of configuring a communication utility for transporting data from a first processor to a second processor over a bus, the method comprising: defining a configuration channel through which data is communicated over a bus by a communication utility (See Paragraphs 6 and 44) interfacing at least a first processor with a second processor (See Figure 4 Numbers 334, 336, and 338); and in accordance with the defined channel configurations, compiling software for controlling the communication utility (See Paragraphs 37 and 63).

30. In reference to Claim 35, Odom discloses the limitations as applied to Claim 34 above. Odom further discloses that the channel configurations are redefinable (See Paragraph 44).

31. In reference to Claim 36, Odom discloses the limitations as applied to Claim 35 above. Odom further discloses that the defining step comprises defining a plurality of redefinable communication channel configurations for a plurality of channels through which data is communicated by the communication utility (See Paragraph 6).

32. In reference to Claim 37, Odom discloses the limitations as applied to Claim 36 above. Odom further discloses that the defining step comprises selecting a configuration type for each channel from a plurality of available configuration types (See Paragraph 44).

33. In reference to Claim 47, Odom discloses the limitations as applied to Claim 36 above. Odom further discloses that the defining step further comprises defining a maximum data transfer size for a channel (See Paragraph 55).

34. In reference to Claim 50, Odom discloses the limitations as applied to Claim 36 above. Odom further discloses that the defining step further comprises defining the conditions under which a channel uses a DMA data transfer (See Paragraph 47).

35. In reference to Claim 51, Odom discloses the limitations as applied to Claim 36 above. Odom further discloses that the defining step comprises defining the number of channels through which data is communicated (See Paragraph 49).

36. In reference to Claim 52, Odom discloses the limitations as applied to Claim 36 above. Odom further discloses that the boards and bus are VXI, which is an extension of VME (See Paragraphs 21 and 42).

37. Claim 65 recites limitations which are substantially equivalent to those of Claim 1, and is rejected under similar reasoning.

38. Claims 54, 55, 56, 57, 58, 62, 63, and 66 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication Number 2002/0055834 to Andrade et al. ("Andrade").

39. In reference to Claim 54, Andrade discloses a device comprising: a user interface through which a user provides configuration data (See Paragraph 10); and a processor configured to receive the configuration data from the user interface and generate a configuration file therefrom (See Paragraph 10), the configuration file comprising configuration information for a plurality of channels over a bus that interconnects a plurality of data processing boards (See Figure 4A and Paragraphs 82-85).

40. In reference to Claim 55, Andrade discloses the limitations as applied to Claim 54 above. Andrade further discloses that the user interface is a graphical user interface (See Paragraph 11).

41. In reference to Claim 56, Andrade discloses the limitations as applied to Claim 55 above. Andrade further discloses that the GUI is configured to allow the user to define the number of channels through which data is communicated over the bus (See Paragraph 10).

42. In reference to Claim 57, Andrade discloses the limitations as applied to Claim 55 above. Andrade further discloses that the GUI is configured to allow the user to define a configuration type for each channel (See Paragraph 10).

43. In reference to Claim 58, Andrade discloses the limitations as applied to Claim 57 above. Andrade further discloses that the GUI is further configured to (1) display a list of available user-selectable configuration types for each channel, and (2) receive user input corresponding to a selection of a configuration type for the list for a channel (See Paragraphs 10 and 11).

44. In reference to Claim 62, Andrade discloses the limitations as applied to Claim 55 above. Andrade further discloses that the GUI is configured to, in response to user input, generate software in accordance with generated configuration file, the software defining how data is communicated over the bus between the boards (See Paragraph 11).

Art Unit: 2111

45. In reference to Claim 63, Andrade discloses a device comprising: a user interface through which a user specifies a stored configuration file (See Paragraph 10), the configuration file comprising configuration information for a plurality of channels over a bus that interconnects a plurality of data processing boards (See Figure 4A and Paragraphs 82-85); and a processor configured to retrieve the specified configuration file and generate software in accordance with the retrieved configuration file, the software for controlling data communications over the bus between the boards (See Paragraph 10).

46. Claim 66 recites limitations which are substantially equivalent to those of Claim 54, and is rejected under similar reasoning.

Claim Rejections - 35 USC § 103

47. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

48. Claims 7, 8, 9, 10, 11, 13, 15, 16, 17, 18, 30, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odom.

Art Unit: 2111

49. In reference to Claim 7, Odom discloses a data processing apparatus comprising: first and second data processing boards (See Figure 4 Numbers 334, 336, and 338); a bus connecting the boards with each other (See Figure 4 Number 332); and wherein each board comprises a communication utility for communicating data according to a redefinable configuration (See Paragraphs 6 and 44). Odom does not expressly disclose that a bus utilization percentage in a range from approximately 13% to approximately 25% is achieved for 8 Kbyte data transfers across the bus.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to achieve an 8Kbyte data transfer with 13%-25% bus utilization in the device of Odom, resulting in the invention of Claim 7, because Applicant has not disclosed that the bus claimed bus utilization provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the device disclosed by Odom to operate equally well with the claimed bus utilization percentage as with another bus utilization percentage. Therefore, it would have been obvious to one of ordinary skill in the art to modify the device of Odom to obtain the invention as specified in Claim 7.

50. In reference to Claim 8, Odom discloses the limitations as applied to Claim 7 above. Odom further discloses that the boards and bus are VXI, which is an extension of VME (See Paragraphs 21 and 42).

51. In reference to Claim 9, Odom discloses the limitations as applied to Claim 7 above. Odom further discloses that the communication utility is configured to communicate data through a plurality of channels, wherein at least one channel has a user-redefinable configuration (See Paragraphs 6 and 44)

52. In reference to Claim 10, Odom discloses the limitations as applied to Claim 9 above. Odom further discloses that each channel is separately user-redefinable (See Paragraph 6).

53. In reference to Claim 11, Odom discloses the limitations as applied to Claim 9 above. Odom further discloses that the at least one channel configuration is user-redefinable with one of a plurality of available configuration types (See Paragraph 44).

54. In reference to Claim 13, Odom discloses the limitations as applied to Claim 9 above. Odom further discloses that at least one channel's configuration has a user-redefinable a maximum data transfer size (See Paragraph 55).

55. In reference to Claim 15, Odom discloses the limitations as applied to Claim 9 above. Odom further discloses that at least one channel's configuration is user-redefinable with respect to whether a data transfer over the bus is a DMA data transfer (See Paragraph 47).

56. In reference to Claim 16, Odom discloses the limitations as applied to Claim 9 above. Odom further discloses that at least one channel's configuration is user-redefinable with respect to the number of channels through which data is communicated (See Paragraph 49).

57. In reference to Claim 17, Odom discloses the limitations as applied to Claim 9 above. Odom further discloses that any number of boards can be used by the system (See Figure 4 and Paragraph 42), and thus the utility is user-redefinable with respect to the number of data processing boards within the apparatus.

58. In reference to Claim 18, Odom discloses the limitations as applied to Claim 17 above. Odom further discloses that the instrument can have fewer boards installed than the number of available boards slots (See Figure 4 and Paragraph 42), and thus is user-redefinable to define a number of data processing boards for the apparatus that is larger than the number of data processing boards actually used by the apparatus.

59. In reference to Claim 30, Odom discloses the limitations as applied to Claim 20 above. Odom does not expressly disclose that a bus utilization percentage in a range from approximately 13% to approximately 25% is achieved for 8 Kbyte data transfers across the bus.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to achieve an 8Kbyte data transfer with 13%-25% bus utilization in the device

of Odom, resulting in the invention of Claim 7, because Applicant has not disclosed that the bus claimed bus utilization provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the device disclosed by Odom to operate equally well with the claimed bus utilization percentage as with another bus utilization percentage. Therefore, it would have been obvious to one of ordinary skill in the art to modify the device of Odom to obtain the invention as specified in Claim 7.

60. In reference to Claim 31, Odom discloses the limitations as applied to Claim 30 above. Odom further discloses that the defining step comprises defining, according to user input, a plurality of redefinable communication channel configurations for a plurality of communication channels, and wherein the communicating step comprises communicating data from one board to the other over the bus according to the defined communication channel configurations (See Paragraphs 6 and 44).

61. In reference to Claim 32, Odom discloses the limitations as applied to Claim 31 above. Odom further discloses that the defining step comprises defining each communication channel's configuration separately (See Paragraph 6).

62. Claims 14, 25, 48, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odom as applied to Claims 9, 22, and 36 above, and further in view of US Patent Number 6,938,118 to Blixt et al. ("Blixt").

63. In reference to Claim 14, Odom discloses the limitations as applied to Claim 9 above. Odom does not disclose that at least one channel's configuration has a user-redefinable board memory allocation. Blixt teaches a channel configuration having a redefinable memory allocation (See Column 14 Line 66 – Column 15 Line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Odom with the redefinable memory allocation of Blixt, resulting in the invention of Claim 14, because buffering the data allows a maximum data transfer speed to be achieved and making the memory allocation redefinable allows channels having a large data flow to have a correspondingly larger area in the memory (See Column 14 Line 66 – Column 15 Line 10 of Blixt).

64. In reference to Claim 25, Odom discloses the limitations as applied to Claim 22 above. Odom does not disclose that the defining step comprises allocating, according to user input, board memory for each of the communication channels. Blixt teaches a channel configuration having a redefinable memory allocation (See Column 14 Line 66 – Column 15 Line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Odom with the redefinable memory allocation of Blixt, resulting in the invention of Claim 25, because buffering the data allows a maximum data transfer speed to be achieved and making the memory allocation

redefinable allows channels having a large data flow to have a correspondingly larger area in the memory (See Column 14 Line 66 – Column 15 Line 10 of Blixt).

65. In reference to Claim 48, Odom discloses the limitations as applied to Claim 36 above. Odom does not disclose that the defining step further comprises allocating memory space to a channel. Blixt teaches a channel configuration having a redefinable memory allocation (See Column 14 Line 66 – Column 15 Line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Odom with the redefinable memory allocation of Blixt, resulting in the invention of Claim 48, because buffering the data allows a maximum data transfer speed to be achieved and making the memory allocation redefinable allows channels having a large data flow to have a correspondingly larger area in the memory (See Column 14 Line 66 – Column 15 Line 10 of Blixt).

66. In reference to Claim 49, Odom and Blixt disclose the limitations as applied to Claim 48 above. Blixt further teaches allocating a receive queue size for the channel (See Column 15 Lines 5-11).

67. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Odom as applied to Claim 7 above, and further in view of Applicant's Admitted Prior Art ("AAPA").

68. In reference to Claim 19, Odom discloses the limitations as applied to Claim 7 above. Odom does not disclose that the first data processing board, the second data processing board, and the bus are implemented in a helmet for a pilot. AAPA teaches that the Strike Helmet 21 has multiple data processing boards connected by a VME bus (See Page 2 Lines 25-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the helmet of AAPA with the system of Odom, resulting in the invention of Claim 19, in order to allow the helmet to be tested and refined (See Paragraphs 2-3 of Odom).

69. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Odom as applied to Claim 36 above, and further in view of US Patent Number 6,222,537 to Smith et al. ("Smith").

70. In reference to Claim 53, Odom discloses the limitations as applied to Claim 36 above. Odom does not disclose that the defining step further comprises defining the channel configurations according to data entry by a user via a graphical user interface. Smith teaches the use of a graphical user interface for inputting data into a computer (See Column 1 lines 10-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Odom using the GUI of Smith, resulting in the invention of Claim 53, because GUI's are easy to use and do not require the user to

know specific commands, operators, syntax rules, and the like (See Column 1 Lines 10-16 of Smith).

71. Claims 59 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrade as applied to Claim 55 above, and further in view of Odom.

72. In reference to Claim 59, Andrade discloses the limitations as applied to Claim 55 above. Andrade does not disclose allowing the user to define a maximum data transfer size for each channel. Odom teaches defining a maximum data transfer size for each channel (See Paragraph 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Andrade with the defining of maximum data transfer size of Odom, resulting in the invention of Claim 59, in order to prevent the transmit and receive buffers from overflowing (See Paragraph 55 of Odom).

73. In reference to Claim 61, Andrade discloses the limitations as applied to Claim 55 above. Andrade does not disclose displaying the conditions under which a channel is to use DMA during data transfers over a bus and receiving a modification to the conditions under which a channel is to use DMA during data transfers over a bus. Odom teaches displaying the conditions under which a channel is to use DMA during data transfers over a bus and receiving a modification to the conditions under which a channel is to use DMA during data transfers over a bus (See Paragraphs 6, 44, and 47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Andrade with the defining of DMA use conditions of Odom, resulting in the invention of Claim 61, because DMA is the most efficient way of moving data (See Paragraph 3 of Odom) and because the system allows DMA resources to be shared (See Paragraph 44 of Odom).

74. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrade as applied to Claim 55 above, and further in view of Blixt.

75. In reference to Claim 60, Andrade discloses the limitations as applied to Claim 55 above. Andrade does not disclose receiving a modification to a channel's memory allocation from a user. Blixt teaches a channel configuration having a redefinable memory allocation (See Column 14 Line 66 – Column 15 Line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Andrade with the redefinable memory allocation of Blixt, resulting in the invention of Claim 60, because buffering the data allows a maximum data transfer speed to be achieved and making the memory allocation redefinable allows channels having a large data flow to have a correspondingly larger area in the memory (See Column 14 Line 66 – Column 15 Line 10 of Blixt).

Art Unit: 2111

76. Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrade as applied to Claim 63 above, and further in view of Microsoft Press Computer Dictionary, Second Edition ("Microsoft").

77. In reference to Claim 64, Andrade discloses the limitations as applied to Claim 63 above. Andrade does not disclose that the user interface is a UNIX command line interface. Microsoft discloses that the use of a UNIX command line interface is well known in the art (See entry 'UNIX').

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Andrade with a UNIX command line interface, resulting in the invention of Claim 64, because UNIX is a powerful operating system that is more portable than other operating systems (See entry 'UNIX' in Microsoft).

Allowable Subject Matter

78. Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

79. The following is a statement of reasons for the indication of allowable subject matter: The Examiner can find neither prior art as a whole, nor motivation to combine the prior art, which discloses all of the limitations of Claim 24. The prior art does not

Art Unit: 2111

disclose the configuration types as claimed in Claim 24 and defined in the Specification and Drawings.

Conclusion

80. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US Patent Number 6,996,638 to Brice, Jr. et al. and US Patent Application Publication Number 2003/0145129 to Nagalcar.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Cleary whose telephone number is 571-272-3624. The examiner can normally be reached on Monday-Thursday (7-3), Alt. Fridays (7-2).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

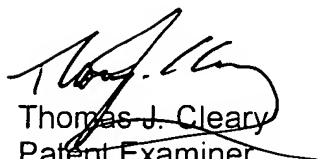
Art Unit: 2111

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJC



MARK H. DINEHART
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100



Thomas J. Cleary
Patent Examiner
Art Unit 2111